

REMARKS/ARGUMENTS

In the Office Action mailed April 2, 2008, claims 1 – 10 were rejected. In response, Applicants have added new claims 11 – 13. Applicants hereby request reconsideration of the application in view of the added claims and the below-provided remarks. No claims have been amended or canceled.

Response to Claim Rejections

Claims 1 – 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Holloway et al. (U.S. Pat. No. 6,183,131, hereinafter Holloway). However, Applicants respectfully submit that these claims are not anticipated by Holloway for the reasons provided below.

Claim 1

Claim 1 recites:

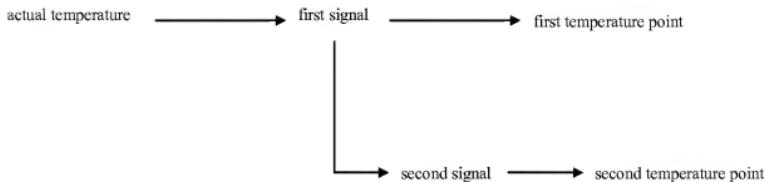
“Arrangement on a semiconductor chip for calibrating a temperature setting curve having
a signal generation unit for providing a first signal, which is proportional to an actual temperature of the chip, whereby a signal offset is creatable by the signal generation unit, which is combined with the first signal to define a second signal; and

a temperature extraction unit receiving the first signal and the second signal for calculating a first temperature point based on the first signal and for calculating a second temperature point based on the second signal, wherein the second temperature point is a virtual temperature point and wherein the first and second temperature points are different from each other.” (emphasis added)

Applicants assert that claim 1 is not anticipated by Holloway because Holloway does not disclose calculating two different temperature points from a single actual temperature of the chip.

Holloway discloses that a particular linearly-temperature-dependent voltage, V_{TEMP} , is used to calculate a temperature point, $T_{OUT}(K)$, see for example, Holloway col. 11 and equation 19. That is, Holloway discloses that a single temperature point, $T_{OUT}(K)$ is calculated from a temperature-dependent voltage, V_{TEMP} , where the temperature-dependent voltage is generated in response to an actual temperature. See also Fig. 12 in which only one temperature, $T_{OUT}(C)$, is generated in response to an actual temperature.

In contrast to Holloway, claim 1 recites that two temperature points (the first and second temperature points) are calculated from a single actual temperature of the chip. The two temperature points are calculated from a single actual temperature of the chip because the first temperature point is calculated from the first signal, which is proportional to the actual temperature of the chip and because the second temperature point is calculated from the second signal, which is proportional to the same actual temperature of the chip because the second signal is a function of the first signal. The relationship between the actual temperature, the first temperature point, and the second temperature point is graphically illustrated below.



While Holloway discloses that that a single temperature point, $T_{OUT}(K)$, is calculated from the temperature-dependent voltage, V_{TEMP} , Holloway does not disclose that two temperature points (i.e., the first and second temperature points) are calculated from a single actual temperature of the chip as recited in claim 1. Because Holloway does not disclose that two temperature points (the first and second temperature points) are calculated from a single actual temperature, Applicants assert that claim 1 is not anticipated by Holloway.

Independent Claim 4

Independent claim 4 recites:

“Method for calibrating a temperature setting curve of a temperature sensor arrangement on a semiconductor chip, the method comprising:
reading a first signal, which is proportional to an actual temperature of the semiconductor chip;

generating a signal offset, which is combined with the first signal to define a second signal;

extracting a first actual temperature from the first signal and a second virtual temperature from the second signal, wherein the first actual temperature and the second virtual temperature are different from each other; and calibrating a temperature setting curve of the semiconductor chip using the first actual temperature and the second virtual temperature.” (emphasis added)

Holloway discloses that a particular linearly-temperature-dependent voltage, V_{TEMP} , is used to calculate a temperature point, $T_{OUT}(K)$, see for example, Holloway col. 11 and equation 19. That is, Holloway discloses that a single temperature point, $T_{OUT}(K)$ is calculated from a temperature-dependent voltage, V_{TEMP} , where the temperature-dependent voltage is generated in response to an actual temperature. See also Fig. 12 in which only one temperature, $T_{OUT}(C)$, is generated in response to an actual temperature. In contrast to Holloway, amended claim 4 recites that two temperatures (a first actual temperature and a second virtual temperature) are extracted from two signals, the first signal and the second signal, respectively, wherein both the first signal and the second signal are ultimately a function of a single actual temperature of the semiconductor chip. The first actual temperature and the second virtual temperature are a function of the single actual temperature of the semiconductor chip because the first actual temperature is extracted from the first signal, which is proportional to the actual temperature of the semiconductor chip and because the second virtual temperature is extracted from the second signal, which is also proportional to the actual temperature of the semiconductor chip because the second signal is a function of the first signal. While Holloway discloses that that a single temperature point, $T_{OUT}(K)$, is calculated from the temperature-dependent voltage, V_{TEMP} , Holloway does not disclose that two temperatures (the first actual temperature and the second virtual temperature) are extracted from a single actual temperature of the semiconductor chip as recited in claim 4. Because Holloway does not disclose that two temperatures (the first actual temperature and the second virtual temperature) are a function of a single actual temperature of the semiconductor chip, Applicants assert that claim 4 is not anticipated by Holloway.

Additionally, Applicants assert that Holloway does not disclose using two different temperatures, a first actual temperature and a second virtual temperature, to calibrate a temperature setting curve, wherein the first actual temperature and the second

virtual temperature are proportional to the same actual temperature of the semiconductor chip as recited in claim 4.

Dependent Claims 2, 3, and 5 – 10

Claims 2, 3, 8, and 9 are dependent on claim 1 and claims 5 – 7 and 10 are dependent on claim 4. Applicants respectfully assert that these claims are allowable at least based on allowable base claims. Additionally, claims 9 and 10 may be allowable for reasons as described below.

Claim 9 recites that “the second temperature point does not exist in the semiconductor chip during calibration of the temperature setting curve” and claim 10 recites that “the second virtual temperature does not exist on the semiconductor chip during calibration of the temperature setting curve.” In the Office action, col. 11, lines 5 – 50 of Holloway is cited as disclosing the limitations of claims 9 and 10. Applicants assert that col. 11, lines 5 – 50 of Holloway discloses how to calculate a single temperature, $T_{OUT}(C)$, from a temperature-dependent voltage, V_{TEMP} . Applicants have found no disclosure of using a temperature point or virtual temperature that does not exist on a chip during calibration of a temperature setting curve. In view of this, Applicants respectfully assert that claims 9 and 10 are not anticipated by Holloway.

New Claims 11 – 13

New claim 11 is supported by Applicants’ specification at, for example, paragraph [0011] and new claims 12 and 13 are supported by Applicants’ specification at, for example, paragraph [0029]. Applicants assert that the limitations of claims 11 – 13 are not disclosed by Holloway.

CONCLUSION

Applicants respectfully requests reconsideration of the claims in view of the amended claims and the remarks made herein. A notice of allowance is earnestly solicited.

Respectfully submitted,

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